

executes setup display engine 170 in a process block 415. If the hot key is not pressed during the pre-boot runtime, process 400 proceeds to a process block 460, wherein the boot target is launched and OS files 150 are loaded into system memory 120.

In a process block 420, pre-boot interpreter 165 parses and interprets ACPI namespace 300 to determine current resource settings ("CRS") and possible resource settings ("PRS") of processing system 100. The CRS and PRS are described by data and control methods encoded in interpreted language code 160 and enumerated in ACPI namespace 300. The CRS describe current configuration settings of processing system 100 and the PRS describe possible configuration settings of processing system 100.

Thus, pre-boot interpreter 165 passes the interpreted AML data to setup display engine 170, which displays the CRS and PRS on a display terminal in a user-friendly format. FIG. 5 illustrates three exemplary user-friendly displays that one embodiment of setup display engine 170 may provide. A display 505 may be the first image the user is shown after pressing the hot key during the pre-boot runtime. By moving a cursor on the screen to highlight "system setup" and pressing "enter", setup display engine 170 generates a display 510. Display 510 illustrates the CRS. For example, "serial port 1" is currently assigned to address "0x2F8." By highlighting the "address" with the cursor and pressing "enter", setup display engine 170 generates a display 515. Display 515 illustrates the PRS for the serial port 1. Again, the user can effect a configuration change merely by moving the cursor over the desired resource setting and pressing "enter". Upon pressing "enter", setup display engine 170 calls pre-boot interpreter 165 to execute the appropriate AML control methods necessary to effect the configuration change to serial port 140.

Returning to FIG. 4, in a process block 425, setup display engine 170 determines whether a configuration change was requested by the user, such as described above. If a configuration change was requested, process 400 continues to a decision block 430. If a configuration change was not requested, process 400 proceeds to process block 460, described above.

In decision block 430, if the user requested a configuration change to an ACPI compliant hardware device, then process 400 continues to a process block 435 where setup display engine 170 calls pre-boot interpreter 165 to execute the requisite AML control methods to effect the changes in hardware. After effecting the requested change, the boot target is launched in process block 460.

On the other hand, if the user requested a configuration change to a non-ACPI compliant hardware device in decision block 430, process 400 proceeds to a process block 445. In process block 445, the BIOS executes the requisite legacy APIs to effect the changes in hardware. Once the APIs complete their task, the boot target is launched in process block 460.

FIG. 6 illustrates one embodiment of a computer system 600 to execute interpreted language code 160 to interact with hardware devices during the pre-boot runtime, in accordance with an embodiment of the present invention. Computer system 600 includes a chassis 605, a monitor 610, a mouse 615 (or other pointing device), and a keyboard 620. The illustrated embodiment of chassis 605 further includes a floppy disk drive 625, a hard disk 630, a power supply (not shown), and a motherboard 635 populated with appropriate integrated circuits including system memory 640, firmware unit 645, and one or more processors 650.

In one embodiment, a network interface card ("NIC") (not shown) is coupled to an expansion slot (not shown) of motherboard 635. The NIC is for connecting computer system 600 to a network 655, such as a local area network, wide area network, or the Internet. In one embodiment network 655 is further coupled to a remote computer 660, such that computer system 600 and remote computer 660 can communicate.

Hard disk 630 may comprise a single unit, or multiple units, and may optionally reside outside of computer system 600. Monitor 610 is included for displaying graphics and text generated by software and firmware programs run by computer system 600. Mouse 615 (or other pointing device) may be connected to a serial port (e.g., serial port 140 described above), USB port, or other like bus port communicatively coupled to processor(s) 650. Keyboard 620 is communicatively coupled to motherboard 635 via a keyboard controller (e.g., PS/2 keyboard controller 135 described above) or other manner similar as mouse 615 for user entry of text and commands.

In one embodiment, firmware unit 645 may store interpreted language code 160, pre-boot interpreter 165, and setup display engine 170 described above. In one embodiment, hard disk 630 may store OS files 150 and OS interpreter 155 described above. Similarly, system memory 640 may temporarily store ACPI namespace 300 while computer system 600 is in use.

The above description of illustrated embodiments of the invention, including what is described in the Abstract, is not intended to be exhaustive or to limit the invention to the precise forms disclosed. While specific embodiments of, and examples for, the invention are described herein for illustrative purposes, various equivalent modifications are possible within the scope of the invention, as those skilled in the relevant art will recognize.

These modifications can be made to the invention in light of the above detailed description. The terms used in the following claims should not be construed to limit the invention to the specific embodiments disclosed in the specification and the claims. Rather, the scope of the invention is to be determined entirely by the following claims, which are to be construed in accordance with established doctrines of claim interpretation.

What is claimed is:

1. A method, comprising:

providing an interpreted language code to a processing system, the interpreted language code defining how to interact with a hardware device of the processing system; and

interpreting the interpreted language code to interact with the hardware device of the processing system prior to entering an operating system ("OS") runtime mode of operation of the processing system.

2. The method of claim 1 wherein the OS runtime mode of operation is entered no earlier than the beginning of loading an OS into system memory of the processing system.

3. The method of claim 2, further comprising interpreting the interpreted language code to interact with the hardware device after entering the OS runtime mode of operation.

4. The method of claim 1 wherein the interpreted language code is compliant with an advance configuration and power interface ("ACPI") specification.

5. The method of claim 4 wherein the interpreted language code comprises ACPI machine language ("AML").